

## ***II. Planning Methodology***

### **Introduction**

The initial edition of this plan was developed in 1999 by the Mitigation Section of the Bureau of Emergency Management and included an eight-month planning process with the State Hazard Mitigation Planning Committee (SHMPC). The Committee held a total of five meetings beginning on September 24, 1998 and ending in April of 2004.

The following are dates of committee meetings that were vital to the development of this Plan. Agendas and attendance sheets can be found in Appendix A.

|                     |   |
|---------------------|---|
| September 24, 1998: | State Hazard Mitigation Team Meeting  |
| October 16, 1998:   | Historical Sub-Committee Meeting  |
| June 22, 1999:      | State Hazard Mitigation Team Meeting  |
| January 15, 2003:   | State Hazard Mitigation Team was solicited for comment on the 1999 edition of the Plan via email. |
| April 2003:         | State Hazard Mitigation Team Meeting (Notes are unavailable)                                      |
| April 13, 2004      | Meeting with Environmental Services   |
| April 13, 2004      | Meeting with Office of Energy and Planning  |
| April 20, 2004      | Meeting with Resources & Economic Development   |
| April 26, 2004      | Meeting with Department of Transportation   |
| April 20, 2004      | Meeting with E-9-1-1 Mapping  |

Pursuant to Section 322, Mitigation Planning, of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, this Plan was revised in 2003 to incorporate the new DMA 2000 planning requirements. As a result, the Bureau of Emergency Management coordinated the revision of the State Plan with the SHMPC and other state, federal and local agencies. The Plan was revised from January 2003 to September 2004.

The Bureau of Emergency Management via email contacted the State Hazard Mitigation Planning Committee on January 15, 2003. (See Appendix A for a copy of the letter sent to the SHMPC). The committee was asked to review the 1999 edition of the Plan and provide comments as necessary. Starting in April of 2004 individual meetings were held with each of the contributing agencies represented on the Hazard Mitigation Planning Committee (See meeting notes in appendix A). The committee represented several state and federal agencies. The following table lists the agencies their representatives

| <b>Committee Members</b> | <b>Agency</b>  |
|--------------------------|--|
| Michael Poirier          | NH Bureau of Emergency Management (BEM)                  |
| Richard Verville         | NH Bureau of Emergency Management (BEM)                  |
| Butch Knowlton           | NH Department of Transportation (DOT)                    |
| Steve Doyon              | NH Department of Environmental Services (DES)            |
| John Dodge               | NH Department of Resources & Economic Development (DRED) |
| Ivy Frances              | FEMA Region 1  |
| Joanne Cassulo           | NH Office of Energy & Planning (OEP)                     |
| Jane Hubbard             | NH BEM Consultant  |

*Table 2.1*

The State Hazard Mitigation Officer and Planning Committee used the following methods and resources to identify hazards that may affect the state:

- Review of past state and federal disaster designations;
- Review of past flooding events;
- Review of existing risk assessment provided by the HAZUS software;
- Review of Flood Insurance Claims in the state since 1978;
- Review of the US Army Corps of Engineers – Cold Region Research Engineering Laboratory (CRREL) and their ice jam data base containing information of 520 ice jam events in the state between 1835 and 1999;
- Coordination with the NH Department of Environmental Services (DES) – Dam Bureau for the review of the threat of dam breach and failure;
- Coordination with the Office of Energy & Planning – Coastal Program for the review of the threat of coastal erosion;
- Review of drought information from the United States Geological Survey and the NH DES;
- Review of the FEMA publication, Multi-Hazard Identification and Risk Assessment;
- Consultation with the State Climatologist for information on extreme heat;
- Coordination with Department of Resources and Economic Development and the State Fire Marshall Office for the review of wildfire and structural fire hazards;
- Review of the States Earthquake Program and the New England States Emergency Consortium for information on earthquakes;
- Review of Radon Information from the NH Office of Community and Public Health's Bureau of Radiological Health;
- Coordination with the National Weather Service and the National Oceanic and Atmospheric Administration for information related to hurricanes, downbursts, winter weather and other weather related hazards; and
- See the Bibliography for complete listing of resources consulted in the development of this plan.

This Plan was developed as a result of the Hazard Mitigation Committee meetings previously listed and by following these planning steps as identified in the *Local Hazard Mitigation Planning Guide for New Hampshire Communities*:

- Step 1 - Establish Hazard Mitigation Committee
- Step 2 - Map the Hazards
- Step 3 - Determine Potential Damage
- Step 4 - Identify Plans/Polices Already in Place
- Step 5 - Identify the Gaps in Protection
- Step 6 - Determine Actions to be taken
- Step 7 - Evaluate Feasible Options
- Step 8 - Determine Priorities
- Step 9 - Develop Implementation Strategy
- Step 10 - Adopt and Monitor the Plan

In addition to the above, the following Agencies represented on the Committee completed the following tasks during the planning process:

| Committee Member Tasks        |  |
|-------------------------------|--|
| <b>Butch Knowlton, DOT:</b>   | <ul style="list-style-type: none"> <li>✓ Reviewed and commented on the 1999 edition of the State Hazard Mitigation Plan</li> <li>✓ Provided DOT related projects to be included in the Plan</li> <li>✓ Evaluated &amp; prioritized Mitigation Projects</li> </ul>  |
| <b>Steve Doyon, DES:</b>      | <ul style="list-style-type: none"> <li>✓ Reviewed and commented on the 1999 edition of the State Hazard Mitigation Plan</li> <li>✓ Provided a detailed update to the following hazards: Dam Failure, Drought, Radon</li> <li>✓ Provided GIS maps related to Dam Classes &amp; Locations in New Hampshire</li> <li>✓ Provided DES related projects to be included in the Plan</li> <li>✓ Evaluated &amp; prioritized Mitigation Projects</li> </ul> |
| <b>John Dodge, DRED:</b>      | <ul style="list-style-type: none"> <li>✓ Reviewed and commented on the 1999 edition of the State Hazard Mitigation Plan</li> <li>✓ Provided a detailed update to the following hazards: Wildfire</li> <li>✓ Provided DRED related projects to be included in the Plan</li> <li>✓ Evaluated &amp; prioritized Mitigation Projects</li> </ul>  |
| <b>Joanne Cassulo, OEP:</b>   | <ul style="list-style-type: none"> <li>✓ Reviewed and commented on the 1999 edition of the State Hazard Mitigation Plan</li> <li>✓ Provided a detailed update to the Coastal Flooding hazard.</li> <li>✓ Provided OEP related projects to be included in the Plan</li> <li>✓ Evaluated &amp; prioritized Mitigation Projects</li> </ul>  |
| <b>Richard Verville, BEM:</b> | <ul style="list-style-type: none"> <li>✓ Reviewed and commented on the 1999 edition of the State Hazard Mitigation Plan</li> <li>✓ Provided BEM related projects to be included in the Plan</li> <li>✓ Evaluated &amp; prioritized Mitigation Projects</li> <li>✓ Assisted with FEMA's review of the Plan</li> </ul>   |

## **Coordination with Other Agencies**

The initial production and current edition of this Plan included contributions from and coordination with many state and federal agencies as well as private and non-profit groups. Appendix A contains a list of Plan Contributors that were contacted by the State Hazard Mitigation Officer in the development of the Plan. In addition Table 2.2 in this Section lists “Industries and Associations Solicited for Comment on the Plan”. All of the information obtained from those agencies and groups were shared with the State Hazard Mitigation Committee and incorporated in the Plan. The following topics summarize the agencies consulted for each hazard type.

### **Historical Flood Data**

The Flood information presented in the Plan is from data provided by the sources identified in the Plan Contributors list in Appendix A. The principle sources of Historical Flood data presented herein have been collected from the USGS. To the extent that they represent empirical measured data from instrumentation, they are considered to be highly reliable. Historical anecdotal data is identified where presented. The SHMO and State Hazard Mitigation Planning Committee coordinated with the following individuals and agencies:

- National Oceanic & Atmospheric Association / National Weather Service
- University of New Hampshire Complex Systems, Institute of Earth Oceans and Space
- State Climatologist with the University of New Hampshire
- Mount Washington Weather Observatory
- US Department of Agriculture / US Geological Survey

The SHMO will continue to develop such data as may become useful in future Flood Mitigation planning initiatives with respect to all areas of meteorological and climatological phenomena. This data, when available, will reflect the best data available to these agencies and will be incorporated into this Plan at the given annual review.

### **Historical Seismic Data**

The Plan incorporates information from a generous collection of articles and technical papers directly related to the seismicity of the Northeast U.S. This collection was reviewed by, and was in some cases authored by John E. Ebel, Ph.D., Director of the Weston (seismic) Observatory and determined to be necessary and sufficient to offer a proper overview of the seismicity of the area. The SHMO and State Hazard Mitigation Planning Committee coordinated with the following individuals and agencies:

- Weston Seismic Observatory
- Louis Klotz Consultants Group
- Bureau of Emergency Management - Natural Hazards Officer / Earthquake Coordinator

### **Historical Severe Wind Data**

Tornado and Hurricane data was taken in part from a project funded by NHBEM and the Red Cross to create a history of disasters impacting New Hampshire. Additional data as to tornadic activity was gleaned from the Tornado Project as is offered on their website: [www.tornadoproject.com](http://www.tornadoproject.com) and is considered highly reliable.

The data presented here as to Downburst activity was gleaned from the files going to FEMA DR-917-NH, from NHBEM Field representatives and other emergency management personnel and from information offered by the Warnings Coordinator and others at the National Weather Service in Gray, Maine. This data, although incomplete as to all such activity within the State, are deemed to be highly reliable as presented.

### **Winter Weather Related Hazards Data**

Data for the Ice Storm hazards within this Plan was obtained from:

- Inter Agency Hazard Mitigation Team Report - FEMA DR-1199-NH; and
- Army Corps of Engineers / Cold Regions Research Engineering Laboratory 1998 Ice Storm Report

The winter storm information in Appendix C was largely reprinted from *Snowstorms Along the Northeastern Coast of the United States: 1955 To 1985*, Paul J. Kocin and Louis Uccellini, American Meteorological Society. All data here is considered to be highly reliable. Some additional data on losses from Snow Avalanche was obtained from Bradley Ray, Lead Snow Ranger, Androscoggin Ranger Station at the USDA U.S. Forest Service, White Mountain National Forest in Gorham, NH and is considered highly reliable.

### **Loss Data**

Aside from such flood loss data, which may originate from the NFIP, few resources were available to the SHMO as of the preparation of the Plan. Future data will likely originate from the insurance community in large part. Certain issues such as proprietary loss exposure information may affect the quality and/or completeness of the data. Efforts will be made to identify any data confidence shortfalls as may become apparent as that data is presented.

In addition, the Bureau of Emergency Management solicited comment and input from local communities, industry associations, volunteer agencies and other private and non-profit representatives. Notices were published with the agencies listed in the following table. The Public Notice (see Appendix A) solicited input from the organizations listed below and advertised that the Plan was located on the Bureau of Emergency Management's website for their review and comment.

| <b>Governmental Agencies, Industries &amp; Associations Solicited for Comment on Plan</b>  |  |
|--|--|
| <b>Agency</b>  | <b>Related Interest/Responsibilities</b>   |
| Office of Energy & Planning  | Provide assistance to local governments on the incorporation of mitigation concerns into local comprehensive planning efforts.   |
| Central Regional Planning Commission<br>Lakes Region Planning Commission<br>Nashua Regional Planning Commission<br>North Country Council<br>Rockingham Planning Commission<br>Southern NH Planning Commission<br>Southwest Region Planning Commission<br>Strafford Regional Planning Commission<br>Upper Valley Lake Sunapee Planning Commission | Educate local governments on new hazard mitigation planning requirements and provide assistance in the development of local hazard mitigation plans. Provide assistance in integration of local planning efforts (including Master Plans) with hazard mitigation plans. Assist communities with preparing, reviewing and updating local ordinances, regulations and plans. |
| New England Floodplain Stormwater Management Association (NEFSMA)  | Promotes sound floodplain and stormwater management practices  |
| NH Building Officials Association (NHBOA)  | Provide information in regards to development interest and concerns in relation to mitigation projects and regulations.  |
| Northern New England Chapter of the American Planning Association (NNECAPA)  | Represents planners, local officials and citizens involved with urban and rural planning.  |
| State Historic Preservation Officer  | Help communities identify ways to mitigate hazards that threaten historic resources in their communities.  |
| New Hampshire Municipal Association  | A non-profit organization that provides information and technical advice, including management and legal advice, to NH communities.  |
| NH Red Cross   | Red Cross helps people cope with disasters by responding immediately with caring relief and compassionate assistance, and helps families live safer and more secure lives through a broad range of programs and activities in communities throughout the nation.   |
| NH Association of Conservation Districts   | Acts as a clearinghouse of conservation information, services and product and residents of New Hampshire facing the challenges of soil and water pollution, land development, wildlife habitat and flood mitigation.   |
| NH VOAD (NH Voluntary Organizations Active in Disasters)   | A membership of voluntary organizations involved with natural disasters.   |

Table 2.2